



MARS17 DECEMBER 14 by JAMES TEMPERTON

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Large quantities of methane have been detected by Nasa's Mars Curiosity rover, suggesting there might be potential for life on the Red Planet. Nasa said that tenfold spikes in the levels of methane had also been detected, hinting further at microbial organisms.

The rover sees constant low-levels of methane in the background, with the strong spikes detected suggesting a localised source. It is not yet clear where the methane is coming from.

"This temporary increase in methane -- sharply up and then back down -- tells us there must be some relatively localised source," said Sushil Atreya from the Curiosity rover science team.

Curiosity has spent the past 20 months sniffing the Martian atmosphere for signs of methane. The background levels of methane were measured at 0.7 parts per billion, with spikes taking this level to between 7 and 9 parts per

While the discovery of methane could be biological, it could also be non-biological. Reactions between water and rock are also known to produce methane. Underground ice caves that trap methane are thought to be the most likely source of the gas. Nasa will hope to discover if it is coming from non-biological chemical reactions or Martian bugs.

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Organic molecules have also been detected in Martian rocks for the first time. These chemical building blocks of life, which can exist without the presence of life, could either be native to Mars or have been delivered by an asteroid. Curiosity drilled a rock dubbed "Cumberland" (pictured) to collect powder for analysis in its on-board laboratory.

"This first confirmation of organic carbon in a rock on Mars holds much promise," said Curiosity participating scientist Roger Summons. He added that the next challenge would be to find other rocks with different and more extensive stores of organic compounds.



Curiosity drilled into this Martian rock, dubbed 'Cumberland', to collect sample for analysis *NASA/JPL-Caltech/MSSS*